

Solar activity remained at low levels during the week, but two Earth-directed coronal mass ejections (CMEs) were observed associated with two filament eruptions. The first was a 15 degree filament, centered near S31W41, that was observed in SDO/AIA 304 imagery lifting off the solar disk from 12/0304 UTC to 12/0330 UTC. In H-alpha imagery, it appeared that the eruption was connected to Region 1912 (S21, L=140, class/area=Hsx/110 on 09 Dec) and was largely responsible for the C4/Sf flare at 12/0336 UTC. The eruptive filament structure had an associated Type II (estimated at 511 km/s) and Type IV radio sweeps as well as a partial halo CME first observed in SOHO/LASCO C2 imagery at 12/0336 UTC.

Later on 12 December, a 7-degree filament eruption centered near S32E27 was observed from approximately 12/0451 UTC to 12/0624 UTC. The filament eruption appeared in conjunction with the C3 flare at 12/0659 UTC from Region 1917 (S15, L=77, class/area=Dkc/340 on 15 Dec), as observed in GOES-15 SXI imagery. An associated CME was observed in SOHO/LASCO C2 imagery beginning at 12/0636 UTC. WSA/Enlil model output indicated a glancing blow from the combination of both CMEs was likely by early on 15 December.

Region 1921 (N07, L=43, class/area=Hkx/400 on 15 Dec) produced the largest flare of the week, a C5/Sf at 12/2214 UTC, and was also the largest region on the visible disk. The remainder of the week was characterized by low level C-class events and several CMEs, none of which appeared to be particularly Earth-directed.

No proton events meeting alert criteria were observed at geosynchronous orbit, however an enhancement in 10 MeV flux was observed from 14 - 15 December. The peak flux observed by GOES-13 was 1.68 pfu at 15/0005 UTC.

The greater than 2 MeV electron flux at geosynchronous orbit ranged from normal background to moderate levels during the week.

Geomagnetic field activity began the week at quiet levels with the exception on a single unsettled period on 10 December. By weeks end, the geomagnetic field activity increased to active levels with minor storm periods observed at high latitudes. A geomagnetic sudden impulse was observed in global magnetometer data (e.g. 26 nT at Canberra, Australia) at 12/1323 UTC following an interplanetary shock seen in ACE/SWEPAM data at 13/1210 UTC. This shock was believed to herald the arrival of a corotating interaction region in advance of a negative polarity coronal hole high speed stream. Over the next 36 hours, solar wind speed would increase from around 270 km/s to reach a maximum of 607 km/s on 14/2114 UTC. Examination of ACE/EPAM low energy particle flux showed peaks around 14/1400 and 14/2300 UTC, suggesting the CMEs mentioned earlier arrived, embedded in the high speed solar wind stream. Bz reached a minimum near -12 nT at 14/0248 UTC and active conditions were subsequently observed during the 14/0300-0600 UTC synoptic period. A second active period was observed during the 14/1800-2100 UTC synoptic period while activity reached minor storm levels at high latitudes. The following day saw a return to mostly quiet conditions.



Space Weather Outlook

16 December - 11 January 2014

Solar activity is expected to be at low levels with a chance for M-class events (R1 - minor - radio blackouts) through the period, particularly with the return of Old Region 1913 on 18 Dec.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to begin the period at high levels through 18 Dec, decreasing to normal to moderate levels for the remainder of the forecast period.

Geomagnetic field activity is expected to reach active levels on 26-27 Dec, 03-04 Jan, and 10 Jan in response to recurrent coronal hole high speed streams. Minor storm conditions may be possible on 04 Jan. Quiet to unsettled levels are expected for the remainder of the forecast period in the absence of any transient features.



Daily Solar Data

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10 ⁻⁶ hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
09 December	168	125	920	B8.0	6	0	0	1	0	0	0	0
10 December	175	169	1410	B8.6	3	0	0	3	0	0	0	0
11 December	171	166	1350	B7.3	4	0	0	5	0	0	0	0
12 December	165	156	1140	B8.0	6	0	0	4	0	0	0	0
13 December	163	141	1050	B7.0	3	0	0	4	0	0	0	0
14 December	164	163	1100	B6.0	4	0	0	6	0	0	0	0
15 December	156	158	1060	B5.8	3	0	0	2	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ² -day -sr)			Electron Fluence (electrons/cm ² -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
09 December	2.2e+05	1.0e+04	2.4e+03		3.3e+06	
10 December	9.6e+04	9.7e+03	2.4e+03		4.8e+06	
11 December	6.9e+04	9.8e+03	2.4e+03		6.1e+06	
12 December	1.1e+05	1.3e+04	2.6e+03		6.2e+06	
13 December	1.1e+06	1.3e+04	2.5e+03		2.6e+07	
14 December	5.9e+06	4.6e+04	2.3e+03		1.4e+06	
15 December	5.6e+06	3.6e+04	2.2e+03		9.5e+05	

Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
09 December	2	1-0-0-1-1-1-1-1	4	0-0-0-1-3-2-1-0	5	1-0-1-1-1-2-2-1
10 December	3	1-2-1-1-1-1-0-1	8	0-1-3-4-3-0-0-0	5	1-3-2-2-1-1-1-1
11 December	2	0-1-1-1-1-1-1-0	1	0-0-0-0-2-0-0-0	4	1-1-1-1-1-0-1-1
12 December	2	0-1-0-1-0-1-1-1	0	0-0-0-1-0-0-0-0	3	0-1-1-1-0-0-0-1
13 December	3	0-1-0-0-2-2-1-1	0	0-1-0-0-0-0-0-0	3	0-1-0-0-2-2-1-1
14 December	10	3-3-2-1-1-3-3-2	19	1-3-2-2-3-5-5-2	16	3-4-2-1-1-3-4-3
15 December	5	1-1-1-1-1-3-1-1	8	1-1-2-3-3-3-1-0	7	2-1-1-1-1-3-1-1

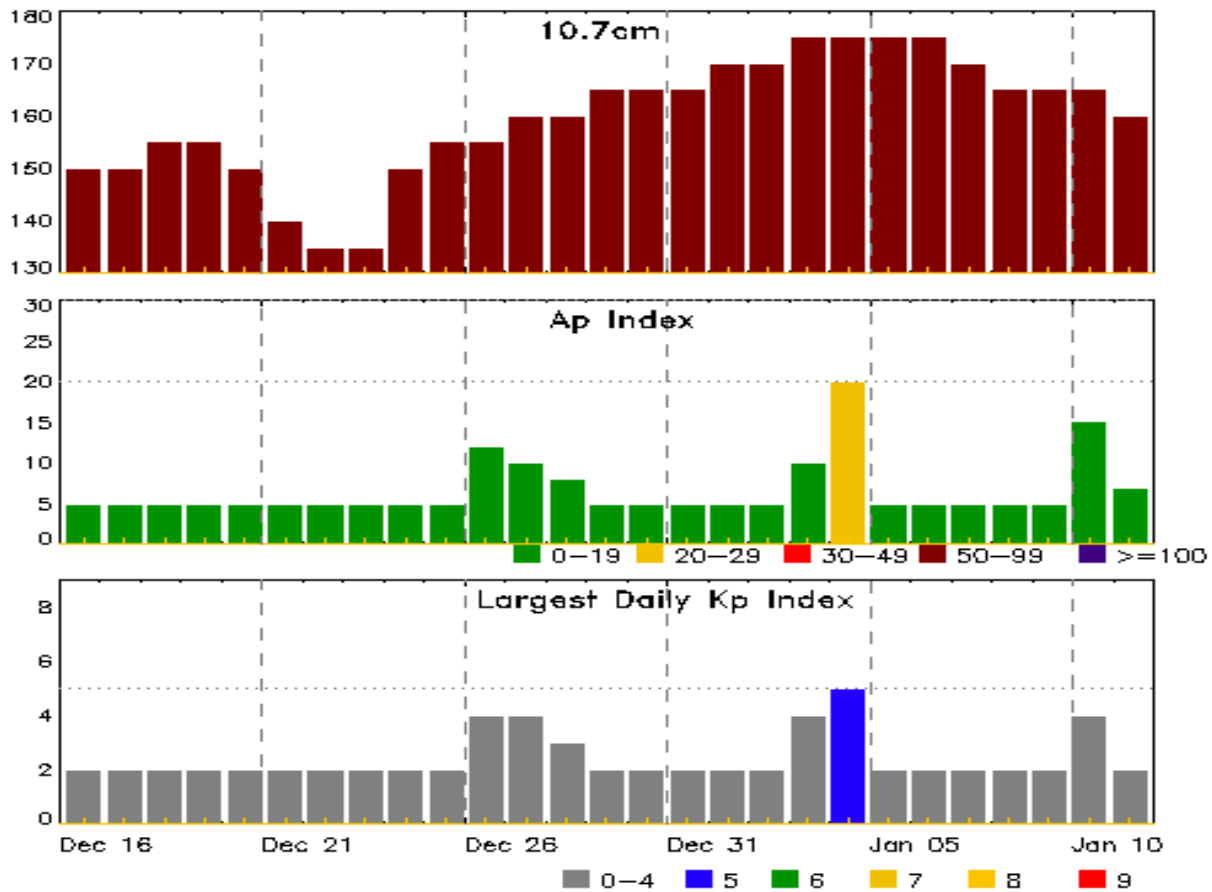


Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
11 Dec 1623	WATCH: Geomagnetic Storm Category G1 predicted	
12 Dec 0417	ALERT: Type IV Radio Emission	12/0318
12 Dec 0838	ALERT: Type II Radio Emission	12/0316
12 Dec 1857	WATCH: Geomagnetic Storm Category G1 predicted	
13 Dec 1236	WARNING: Geomagnetic Sudden Impulse expected	13/1315 - 1345
13 Dec 1336	SUMMARY: Geomagnetic Sudden Impulse	13/1323
14 Dec 0136	WARNING: Geomagnetic K = 4	14/0135 - 1300
14 Dec 0449	ALERT: Geomagnetic K = 4	14/0449
14 Dec 1618	WARNING: Geomagnetic K = 4	14/1620 - 15/0100
14 Dec 1918	ALERT: Geomagnetic K = 4	14/1911



Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
16 Dec	150	5	2	30 Dec	165	5	2
17	150	5	2	31	165	5	2
18	155	5	2	01 Jan	170	5	2
19	155	5	2	02	170	5	2
20	150	5	2	03	175	10	4
21	140	5	2	04	175	20	5
22	135	5	2	05	175	5	2
23	135	5	2	06	175	5	2
24	150	5	2	07	170	5	2
25	155	5	2	08	165	5	2
26	155	12	4	09	165	5	2
27	160	10	4	10	165	15	4
28	160	8	3	11	160	7	2
29	165	5	2				

Energetic Events

Date	Time			X-ray		Optical Information			Peak		Sweep Freq	
	Begin	Max	Half	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	Radio Flux		Intensity	
			Max						245	2695	II	IV

No Events Observed

Flare List

Date	Time			X-ray Class	Optical		Rgn #
	Begin	Max	End		Imp/ Brtns	Location Lat CMD	
09 Dec	0324	0330	0342	C2.1			
09 Dec	1115	1130	1148	C2.9			1917
09 Dec	1233	1321	1352	C2.3			
09 Dec	1549	1552	1555	C1.8			1920
09 Dec	1651	1656	1702	C2.6			1921
09 Dec	1803	1808	1810	C1.9			
09 Dec	2340	2341	2344		SF	S15W12	1916
10 Dec	0238	0238	0254		SF	S15W12	1916
10 Dec	1041	1045	1049	C1.9			1920
10 Dec	1923	1930	1939	C1.7			
10 Dec	2002	2007	2012	C2.3			1916
10 Dec	2243	2249	2301		SF	S15W12	
10 Dec	2330	2330	2338		SF	S15W12	
11 Dec	0224	0225	0228		SF	S12W65	1916
11 Dec	0704	0705	0709		SF	S12W68	1916
11 Dec	0809	0809	0825		SF	S15E03	
11 Dec	1146	1153	1201	C1.7			
11 Dec	1301	1301	1303		SF	S09E49	1918
11 Dec	1354	1401	1412	C1.2			1916
11 Dec	2037	2045	2101	C1.7			1916
11 Dec	2249	2306	2317	C2.7	SF	S20E21	1917
12 Dec	0311	0336	0358	C4.6	SF	S23W46	1912
12 Dec	0538	0557	0624		SF	S22E28	
12 Dec	0638	0659	0737	C3.4			1917
12 Dec	1132	1139	1209	C2.3	SF	S12E13	1917
12 Dec	1636	1643	1648	C2.6			1917
12 Dec	1930	1934	1939	C1.6			
12 Dec	2205	2214	2219	C5.9	SF	N10E38	1921
13 Dec	0133	0138	0141	C2.2			1917
13 Dec	0305	0315	0331	C4.8			1917
13 Dec	1125	U1125	1151		SF	S13W00	1917



Flare List

Date	Time			Optical			Rgn #
	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	
13 Dec	1221	1222	1235		SF	S13W00	1917
13 Dec	1230	1231	1247		SF	N12E29	1921
13 Dec	2255	2255	2302	C1.2	SF	N10E22	1920
14 Dec	0838	0838	0845		SF	S14W09	1917
14 Dec	0926	0940	0943	C1.1	SF	S08E53	1925
14 Dec	0954	0955	0957		SF	S14W10	1917
14 Dec	1100	1124	1140	C2.3			1917
14 Dec	1109	1118	1120		SF	S14W14	1917
14 Dec	1120	1122	1159		SF	S14W14	1917
14 Dec	1514	1537	1556	C1.6			1917
14 Dec	2152	2159	2209	C1.4	SF	S05E40	1925
15 Dec	0419	0419	0422		SF	S15W23	1917
15 Dec	0814	0819	0828	C1.3	SF	N09W03	1926
15 Dec	0908	0913	0916	C2.8			
15 Dec	1022	1028	1031	C1.3			1917

Region Summary

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1909															
27 Nov	S18E69	208	140	5	Dso	2	B								
28 Nov	S18E59	205	300	9	Dkc	9	B								
29 Nov	S18E45	206	320	9	Dkc	14	B								
30 Nov	S18E31	207	330	10	Dkc	17	BG	1							
01 Dec	S18E20	205	350	10	Dkc	23	BG								
02 Dec	S17E06	205	330	11	Ekc	27	BG								
03 Dec	S18W07	205	250	11	Ekc	17	BG								
04 Dec	S17W20	205	250	11	Ekc	11	BG								
05 Dec	S17W34	206	200	10	Dai	19	B	1			1				
06 Dec	S17W50	207	140	10	Dso	10	B	1			2				
07 Dec	S17W61	207	100	10	Cso	7	B		1			1			
08 Dec	S19W79	211	50	2	Hsx	1	A								
09 Dec	S19W93	212	40	2	Hsx	1	A								
								3	1	0	3	1	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 205

Region 1912

01 Dec	S22E79	146	plage					1							
02 Dec	S21E66	145	80	2	Hsx	1	A								
03 Dec	S21E53	144	120	2	Hsx	1	A								
04 Dec	S21E40	143	110	2	Hsx	1	A								
05 Dec	S21E26	146	110	2	Hsx	1	A								
06 Dec	S21E17	140	130	14	Cao	1	B								
07 Dec	S21E01	143	120	2	Hsx	1	A								
08 Dec	S21W12	144	120	2	Hsx	1	A				1				
09 Dec	S21W24	143	110	4	Hsx	2	A								
10 Dec	S21W38	143	80	2	Hsx	1	A								
11 Dec	S21W52	144	80	2	Hsx	1	A								
12 Dec	S21W64	143	80	2	Hsx	1	A	1			1				
13 Dec	S21W79	146	60	2	Hsx	1	A								
14 Dec	S21W90	143	60	2	Hsx	1	A								
								2	0	0	2	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 143



Region Summary - continued

Date	Location		Sunspot Characteristics					Flares							
	Lat CMD	Helio Lon	Area 10 ⁻⁶ hemi.	Extent (helio)	Spot Class	Spot Count	Mag Class	X-ray			Optical				
								C	M	X	S	1	2	3	4

Region 1915

03 Dec	S29W08	206	10	4	Bxo	3	B								
04 Dec	S29W23	208	30	3	Cao	3	B								
05 Dec	S29W37	209	80	5	Cao	9	B								
06 Dec	S30W48	206	30	8	Dro	10	B								
07 Dec	S30W59	205	10	10	Bxo	4	B								
08 Dec	S30W73	205	plage												
09 Dec	S30W87	206	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 206

Region 1916

04 Dec	S14E19	165	10	4	Bxo	3	B								
05 Dec	S14E05	167	50	7	Dao	12	B	1			1				
06 Dec	S13W10	168	200	9	Dac	21	BG				2				
07 Dec	S13W25	171	220	8	Dai	34	BG	2			2				
08 Dec	S13W37	169	240	11	Eai	20	BG				1				
09 Dec	S13W51	169	210	11	Eac	20	BG				1				
10 Dec	S12W64	169	350	12	Ekc	27	BG	1			1				
11 Dec	S12W78	171	320	12	Ekc	20	BG	2			2				
12 Dec	S13W90	169	120	12	Eac	4	B								
								6	0	0	10	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 167

Region 1917

06 Dec	S16E77	83	plage								2				
07 Dec	S16E63	83	60	8	Dao	8	B	1							
08 Dec	S16E57	74	210	8	Dai	8	B	1							
09 Dec	S16E45	74	240	8	Cai	10	B	1							
10 Dec	S17E31	74	250	7	Dki	18	B								
11 Dec	S15E17	75	210	7	Dai	13	B	1			1				
12 Dec	S15E04	75	190	6	Cai	12	B	3			1				
13 Dec	S15W10	77	220	7	Dai	11	BG	2			2				
14 Dec	S15W24	77	260	9	Dkc	26	BG	2			4				
15 Dec	S15W37	77	340	10	Dkc	33	BG	1			1				
								14	0	0	9	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 75



Region Summary - continued

Date	Location	Sunspot Characteristics						Flares							
	Lat CMD	Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
		Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1918															
08 Dec	S09E76	56	60	2	Hax	3	A								
09 Dec	S08E63	55	110	3	Dao	4	B								
10 Dec	S09E51	54	170	5	Dao	8	B								
11 Dec	S09E38	54	160	5	Dao	7	B				1				
12 Dec	S08E25	53	180	6	Dao	13	BG								
13 Dec	S09E11	56	180	6	Dao	11	BG								
14 Dec	S10W02	55	180	6	Dao	8	BG								
15 Dec	S10W15	55	170	6	Cao	11	BG								
								0	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 55

Region 1919															
09 Dec	S06W25	144	20	3	Cro	5	B								
10 Dec	S06W38	144	20	6	Cro	3	B								
11 Dec	S06W52	145	20	4	Cro	3	B								
12 Dec	S06W65	145	10	2	Axx	2	A								
13 Dec	S06W80	147	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 144

Region 1920															
09 Dec	N12E71	47	70	4	Hsx	1	A	1							
10 Dec	N12E57	48	60	2	Hax	1	A	1							
11 Dec	N12E44	48	90	2	Hax	1	A								
12 Dec	N13E31	48	80	3	Hax	2	A								
13 Dec	N12E18	49	70	2	Hax	2	A	1			1				
14 Dec	N12E05	48	70	4	Hax	5	A								
15 Dec	N13W07	47	50	2	Hsx	3	A								
								3	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 48



Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1921															
09 Dec	N06E75	43	120	6	Hsx	2	A	1							
10 Dec	N06E62	43	350	4	Hkx	2	A								
11 Dec	N07E50	42	350	4	Hkx	2	A								
12 Dec	N08E37	42	360	4	Hkx	2	A	1			1				
13 Dec	N07E23	44	350	5	Cko	8	B				1				
14 Dec	N07E10	43	380	6	Cko	9	B								
15 Dec	N07W03	43	400	7	Hkx	9	A								
								2	0	0	2	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 43

<i>Region 1922</i>															
10 Dec	N12W15	120	120	6	Dao	14	BG								
11 Dec	N10W32	124	90	7	Dso	8	BG								
12 Dec	N10W45	124	90	10	Dsi	9	B								
13 Dec	N10W58	125	80	10	Dso	4	B								
14 Dec	N10W71	124	60	10	Dao	3	B								
15 Dec	N10W84	124	40	8	Cao	2	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 120

<i>Region 1923</i>															
10 Dec	N17E28	77	10	4	Bxo	5	B								
11 Dec	N18E14	79	10	5	Bxo	9	B								
12 Dec	N18E02	78	10	8	Bxo	9	B								
13 Dec	N18W10	77	50	6	Dao	8	B								
14 Dec	N17W23	76	40	8	Dao	11	B								
15 Dec	N17W37	77	30	7	Cro	10	B								
								0	0	0	0	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 78

<i>Region 1924</i>															
11 Dec	S13W59	151	20	4	Cro	2	B								
12 Dec	S12W73	152	20	2	Cro	2	B								
13 Dec	S13W86	153	10	5	Bxo	2	B								
								0	0	0	0	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 151



Region Summary - continued

	Location	Sunspot Characteristics						Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10 ⁻⁶ hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
Region 1925															
13 Dec	S08E56	11	30	5	Cro	4	B								
14 Dec	S07E42	11	30	7	Cro	4	B	2			2				
15 Dec	S07E28	12	20	2	Hrx	3	A								
								2	0	0	2	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 12

Region 1926

14 Dec	N09W01	54	20	6	Cro	6	B								
15 Dec	N09W14	54	10	6	Bxo	7	B	1			1				
								1	0	0	1	0	0	0	0

Still on Disk.

Absolute heliographic longitude: 54

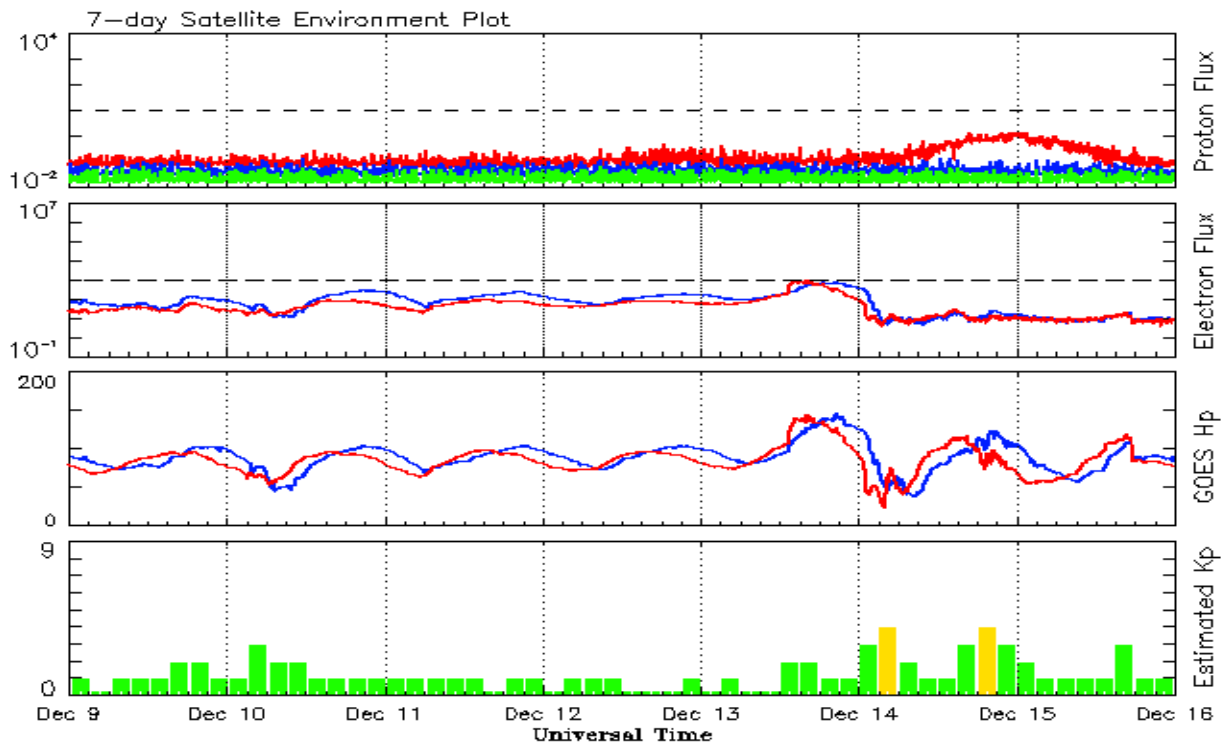


Recent Solar Indices (preliminary)
Observed monthly mean values

Month	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth
	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
2011									
December	106.3	73.0	0.69	89.2	63.4	141.2	121.6	3	8.0
2012									
January	91.3	58.3	0.64	92.0	65.5	133.1	124.4	6	8.3
February	50.1	32.9	0.66	94.2	66.9	106.7	126.7	7	8.4
March	77.9	64.3	0.82	94.1	66.8	115.1	126.8	14	8.1
April	84.4	55.2	0.65	91.3	64.6	113.1	125.8	9	8.0
May	99.5	69.0	0.69	87.7	61.7	121.5	123.8	8	8.2
June	88.6	64.5	0.73	83.9	58.9	120.5	121.1	10	8.3
July	99.6	66.5	0.67	82.4	57.8	135.6	119.5	13	8.3
August	85.8	63.0	0.74	83.1	58.2	115.7	119.2	7	8.1
September	84.0	61.4	0.73	83.7	58.1	123.2	118.9	8	7.8
October	73.5	53.3	0.73	85.0	58.6	123.3	119.2	9	7.4
November	89.2	61.8	0.69	87.3	59.7	120.9	120.1	6	7.3
December	60.4	40.8	0.68	88.0	59.6	108.4	120.1	3	7.5
2013									
January	99.8	62.9	0.63	87.1	58.7	127.1	118.9	4	7.5
February	60.0	38.1	0.63	86.7	58.4	104.4	118.0	5	7.4
March	81.0	57.9	0.71	85.7	57.5	111.2	117.1	9	7.4
April	112.8	72.4	0.64	86.7	57.9	125.0	116.6	5	7.2
May	125.5	78.7	0.63	90.5	59.9	131.3	118.1	10	7.0
June	80.1	52.5	0.66			110.2		13	
July	86.1	57.0	0.66			115.6		9	
August	90.2	66.0	0.73			114.7		9	
September	55.0	36.9	0.67			102.7		5	
October	127.1	85.6	0.67			132.3		7	
November	125.7	77.6	0.62			148.4		5	

Note: Values are final except for the most recent 6 months which are considered preliminary.
Cycle 24 started in Dec 2008 with an RI=1.7.





*Weekly Geosynchronous Satellite Environment Summary
Week Beginning 09 December 2013*

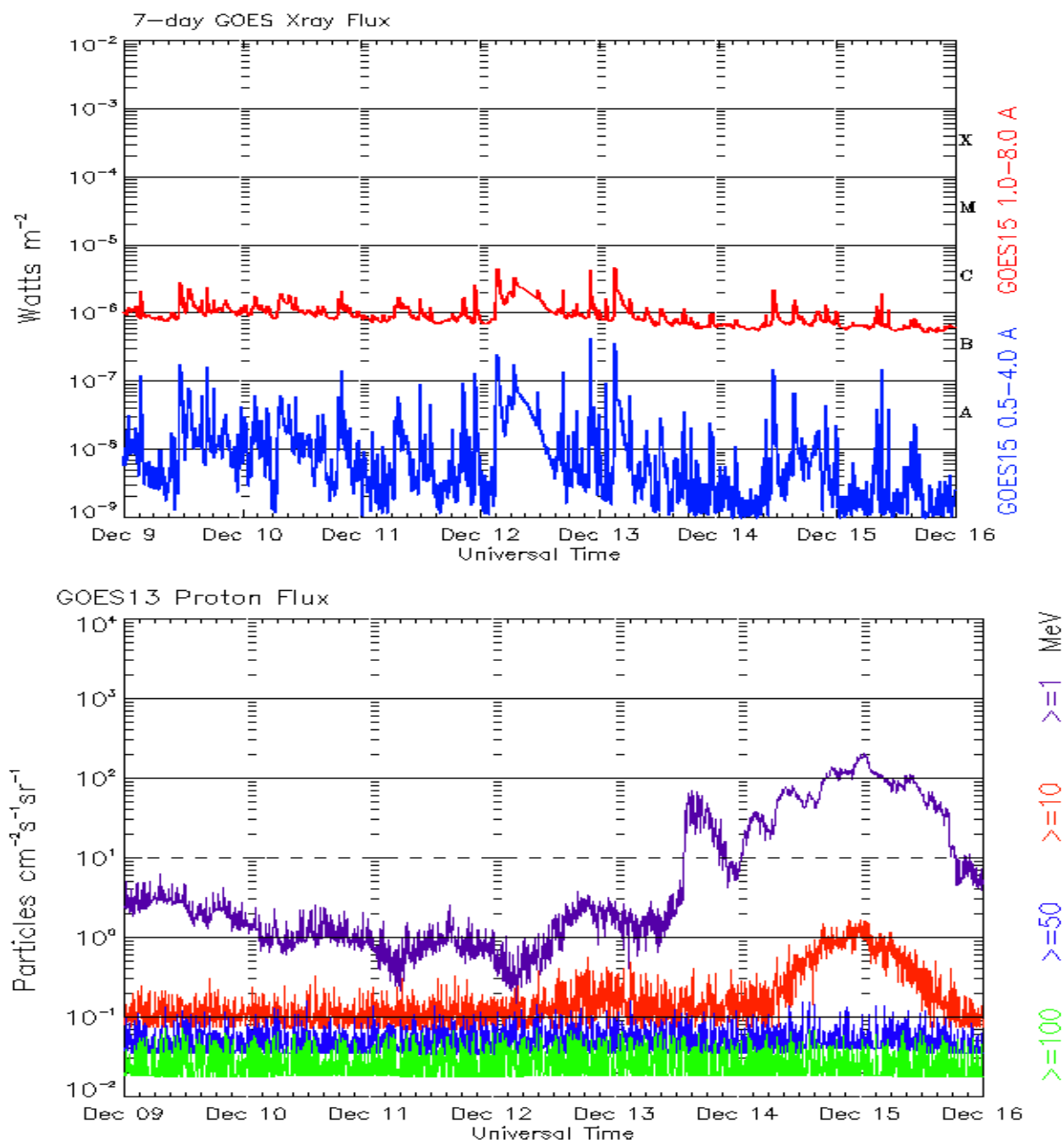
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm²-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm²-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

The Estimated 3-hour Planetary Kp-index is derived at the NOAA Space Weather Prediction Center using data from the following ground-based magnetometers: Boulder, Colorado; Chambon la Foret, France; Fredericksburg, Virginia; Fresno, California; Hartland, UK; Newport, Washington; Sitka, Alaska. These data are made available thanks to the cooperative efforts between SWPC and data providers around the world, which currently includes the U.S. Geological Survey, the British Geological Survey, and the Institut de Physique du Globe de Paris.

The data included here are those now available in real time at the SWPC and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are 'global' parameters that are applicable to a first order approximation over large areas. Hp parallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.



*Weekly GOES Satellite X-ray and Proton Plots
Week Beginning 09 December 2013*

The x-ray plots contains five-minute averages x-ray flux (Watt/m^2) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged integral flux units (pfu = protons/ cm^2 -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1 , >10 , >30 , and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.



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Notice: The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned.
Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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